

The National Standards Project: What every teacher should know



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The basics on Autism



- The term “Autism” sub-classifies a group of children who demonstrate impaired development in social interaction and communication, In addition to a restrictive repertoire of activity and interests.
- 1 of every 150 births are diagnosed somewhere on the spectrum (CDC, 2005).
- A recent article in ***Pediatrics*** put the estimate at 1 in 91.
- Autism is 4 - 5 times more common in males than females.

Intervention Models



- There are several different treatment models that are used with children who have ASD
- Children vary in their particular responses to interventions making the evidence hard to evaluate.
- Some children make gains so significant that they return to levels indistinguishable from their peers, and most make significant gains with early intervention.

What we agree works



- Although there is much controversy in the area of developing the best treatments for autism, there are some factors that are widely accepted, regardless of approach.
- Interdisciplinary teams representing no particular field or approach have agreed on the following factors:

Components to a successful intervention



- Intensive (30-40 hours per week for 2-3 years)
- Comprehensive (targeted all areas of functioning), early intervention (began before age of three)
- Family participation
- Integration into typical settings
- Individualization of treatment components and progression
- Quality control of staff working with the child.

What does “individualize” mean?



- Although it is highly recommended that treatments be individualized – there are some best practice guidelines to adhere to for all children regardless of variation.
- Just as with typical children, some may excel in reading, others in math – but all children need to be exposed to both and can do well in both with good teaching.
- Autism is not different. We do individualize treatment – but within a continuum of best practice.

What is “Evidence-based?”



- It is not uncommon to hear about effective, even amazing treatments from reports by parents or professionals.
- Such claims in past years have wasted time and money by leading parents down the wrong track (or at least, away from more effective interventions).
- Because of this; responsible professionals recommend only treatments that have scientific evidence to support their claims.

Three kinds of evidence



1. Anecdotal

- someone's story

2. Correlation

- Collected data – but no control for extraneous variables

3. Experimental

- The only form of evidence that has rigor due to replication, controlled designs, and careful manipulation of variables involved

The problem with anecdotal reports



- Anecdotal reports, or testimonials are single case histories and, in the best cases, are heart- warming and motivating. However, there are real problems with this kind of info:
 - Generalizing from one person's experience
 - It is typically the positive experiences that are reported
 - Anecdotal reports are difficult or impossible to verify, results are subjective
 - Self-report cannot be collaborated
 - Many uncontrolled factors could have been a part of the experience, but there is no way to know

Correlation Research



- A step up from Anecdotal reports
- Measures one behavior or event and looks for concurrent variables in another
 - Nothing is manipulated, just measure two things of interest
 - ✦ Ice cream sales go up when the weather is hot.
 - ✦ Kids who watch a lot of TV are more overweight than those who watch less.

Problems with correlations



- Assuming causality – correlation does NOT mean causation
 - Direction on causality – which direction does it go
 - Correlation research is not ideal for our purposes, but does have some usefulness

Controlled Studies



- Researchers design an experiment in which they perform some experiment manipulation under controlled circumstances and then look for some change in measured behavior
 - This is clearly better than anecdotal or correlation research because it meets three criteria

Three main criteria



- Required to determine if research had proven a relationship
 1. Demonstrated the direction of causality
 2. Replicated the demonstration
 3. Controlled for potential confounding variables

Frustration with science



- Little in the way of answers about etiology or cure – after years of research
 - Slow, methodological process that yields little quickly – however – will not fall victim to “quick fix” answers that are not supported
- Confusing and opposing claims
 - Megavitamins, wheat-free diets, MMR vaccines
 - ✦ Should not be answered by who shouts the loudest – but rather by the best and most rigorous science

Single-subject design versus case study



- Experimental design controls study and demonstrated a functional relationship (case study does not)
 - Stats need to deal with large populations whose important characteristics are known – need large numbers
 - Cannot ethically submit large groups of children with autism to controls that withhold effective procedures – and characteristics that unify all children with autism are still not completely understood

Why Single subject design works



- Level of analysis for the questions we want to study in best treatment is appropriate to small numbers of participants within studies
 - High number of replication eventually provides the numbers needed to make generalizations to subgroups in autism
 - Single subject design DOES demonstrate direction of causality
 - Does control for extraneous variables

Group Study Design



- More common in medical and mainstream psychology.
- Large ***n*** studies are appropriate for certain questions.
 - Etiology
 - Pharmaceutical interventions
 - CAM interventions (diets, supplements)
 - Comparisons between two or more treatments

Three Categories of treatments



1. Those that work and are scientifically-validated!
2. Those that have shown some efficacy (some good – no harm), but lack scientific evidence.
3. Those that have no evidence and can cause harm!

National Autism Center



- National Standards Project
- The National Standards Project, a primary initiative of the National Autism Center, addresses the need for evidence-based practice guidelines for Autism Spectrum Disorders (ASD).
- The National Standards Project seeks to:
 - “ provide the strength of evidence supporting educational and behavioral treatments
 - that target the core characteristics of these neurological disorders
 - “ describe the age, diagnosis, and skills/behaviors targeted for improvement associated with treatment options
 - “ identify the limitations of the current body of research on autism treatment
 - “ offer recommendations for engaging in evidence-based practice for ASD
- *Who will benefit from national standards?*

The National Autism Center



- The National Autism Center is dedicated to serving children and adolescents with Autism Spectrum Disorders (ASD) by providing reliable information, promoting best practices, and offering comprehensive resources for families, practitioners, and communities.
- An advocate for evidence-based treatment approaches, the National Autism Center identifies effective programming and shares practical information with families about how to respond to the challenges they face. The Center also conducts applied research as well as develops training and service models for practitioners. Finally, the Center works to shape public policy concerning ASD and its treatment through the development and dissemination of national standards of practice.

Purposes:



1. To identify the level of research support currently available for educational and behavioral interventions used with individuals (below 22 years of age)¹ with Autism Spectrum Disorders (ASD). These interventions address the core characteristics of these neurological disorders. Knowing levels of research support is an important component in selecting treatments that are appropriate for individuals on the autism spectrum.
2. To help parents, caregivers, educators, and service providers understand how to integrate critical information in making treatment decisions. Specifically, evidencebased practice involves the integration of research findings with {a} professional judgment and data-based clinical decision-making, {b} values and preferences of families, and {c} assessing and improving the capacity of the system to implement the intervention with a high degree of accuracy.
3. To identify limitations of the existing treatment research involving individuals with ASD

Categories of evidence



- Established. Sufficient evidence is available to confidently determine that a treatment produces favorable outcomes for individuals on the autism spectrum. That is, these treatments are established as effective.
- Emerging. Although one or more studies suggest that a treatment produces favorable outcomes for individuals with ASD, additional high quality studies must consistently show this outcome before we can draw firm conclusions about treatment effectiveness.
- Unestablished. There is little or no evidence to allow us to draw firm conclusions about treatment effectiveness with individuals with ASD. Additional research may show the treatment to be effective, ineffective, or harmful.
- Ineffective/Harmful. Sufficient evidence is available to determine that a treatment is ineffective or harmful for individuals on the autism spectrum.

Effective Treatments



- We identified 11 treatments as Established (i.e., they were established as
- effective) for individuals with Autism Spectrum Disorders (ASD). Established
- Treatments are those for which several well-controlled studies have shown
- the intervention to produce beneficial effects. There is compelling scientific
- evidence to show these treatments are effective; however, even among
- Established Treatments, universal improvements cannot be expected to
- occur for all individuals on the autism spectrum.
- The following interventions are Established Treatments:
 - Antecedent Package
 - Behavioral Package
 - Comprehensive Behavioral Treatment for Young Children
 - Joint Attention Intervention
 - Modeling
 - Naturalistic Teaching Strategies
 - Peer Training Package
 - Pivotal Response Treatment
 - Schedules
 - Self-management
 - Story-based Intervention Package

Emerging Treatments



- A large number of studies fall into the “Emerging” level of evidence.
- We believe scientists should find fertile ground for further research in these areas.
- The number of studies conducted that contributed to this rating is listed in parentheses after the treatment name.

Emerging Treatments



- Augmentative and Alternative Communication Device {14 studies}
- Cognitive Behavioral Intervention Package {3 studies}
- Developmental Relationship-based Treatment {7 studies}
- Exercise {4 studies}
- Exposure Package {4 studies}
- Imitation-based Interaction {6 studies}
- Initiation Training {7 studies}
- Language Training (Production) {13 studies}

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Emerging Treatments (cont.)



- Massage/Touch Therapy {2 studies}
- Multi-component Package {10 studies}
- Music Therapy {6 studies}
- Peer-mediated Instructional Arrangement {11 studies}
- Picture Exchange Communication System {13 studies}
- Reductive Package {33 studies}
- Scripting {6 studies}
- Sign Instruction {11 studies}
- Social Communication Intervention {5 studies}
- Social Skills Package {16 studies}
- Theory of Mind Training {4 studies}

Unestablished Treatments



- Unestablished Treatments are those for which there is **little or no evidence** in the scientific literature that allows us to draw firm conclusions about the effectiveness of these interventions with individuals with ASD.
- There is no reason to assume these treatments are effective. Further, there is no way to rule out the possibility these treatments are ineffective or harmful.

Unestablished



- Sensory Integrative Package {7 studies}
- Academic Interventions {10 studies}
- Auditory Integration Training {3 studies}
- Facilitated Communication {5 studies}
- Gluten- and Casein-Free Diet {3 studies}
- *Note: Early studies suggested that the Gluten- and Casein-Free diet may produce favorable outcomes but did not have strong scientific designs. Better controlled research published since 2006 suggests there may be no educational or behavioral benefits for these diets. Further, potential medically harmful effects have begun to be reported in the literature. We recommend reading the following studies before considering this option:*

What to do with this information



- Stick to the Evidence based categories as much as possible
 - Behaviorally based interventions
 - ✦ Small and specific learning units practiced over and over again
 - ✦ Progress carefully tracked
 - ✦ Assessment on a regular basis
 - ✦ Use solid research-based behavioral principles
 - Social stories and similar methods for social skills

What to do...



Supplement with “emerging” treatments

- ✦ Behavior reduction
- ✦ Augmentative communication including PECs
- ✦ Speech and language interventions
- ✦ Peer assisted techniques including social skills interventions

An excellent school program will...



- Be based on individual assessment using a tool that will specify skills and deficits (i.e., HELP)
- Be AT LEAST 75% directed learning
 - ✦ (3 hours out of a 4 hour day (8:30 – 12:30))
 - ✦ (5.5 hours out of a 7 hour day (8:30 – 3:30))
 - (there are reasonable ways to accomplish this!!)
- Frequent opportunities to respond = hundreds a day (Yes...hundreds!!)
 - Some formal and structured
 - Some incidental and play or activity based
- High teacher to student ratio
 - Instructional aides that are well trained are great!

Accomplishing the Ideal



- Takes trained staff in fairly high ratio
 - Knowledgeable in specific teaching techniques
 - ✦ Shaping, reinforcement, data collection, prompting
 - ✦ Behavior management and motivation techniques
- Small class sizes (no more than 10)
- Good Pre-planning – very helpful to use a set curriculum or assessment tool
 - (HELP, ABLLS, STAR)

It can be done and they WILL learn!

Conclusion



- It is a little more work – not a lot more work – than the more traditional eclectic model.
- The work is mostly on the front end. Once staff is trained and a curriculum adopted, the program will run without teachers and aides damaging themselves or each other 😊
- Questions & Ideas??
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